

IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A method for automatically determining a speed of a flowing medium in a magnetic resonance tomography flow measurement, comprising the steps of:

acquiring an overview magnetic resonance image of a selected area of a living subject;

displaying said overview image on a screen;

performing a scout flow measurement by acquiring a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium;

determining from said scout flow measurement, automatically determining a peak speed of said flowing medium in said tissue area;

performing an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed; and

generating and displaying on said screen a speed-resolved image including said tissue area using said peak spread to set a grey scale range in said speed-resolved image, obtained by said optimized flow measurement in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed resolved image of said

tissue area together with a generated speed profile of said flowing medium in said tissue area.

2. (Original) A method as claimed in claim 1 comprising automatically performing said optimized flow measurement immediately after performing said scout flow measurement.

3. (Original) A method as claimed in claim 1 comprising adding a safety margin to said determined peak speed.

4. (Original) A method as claimed in claim 3 comprising employing a value as said safety margin that is 10% of said peak speed.

5. (Original) A method as claimed in claim 1 employing a time, as said motion cycle, selected from the group consisting of a breathing cycle of said subject and a cardiac cycle of said subject.

6. (Original) A method as claimed in claim 1 comprising acquiring said image series in said scout flow measurement at approximately 20 images per motion cycle.

7. - 8. (Cancelled)

9. (Original) A method as claimed in claim 1 comprising manually marking said tissue area in said overview image displayed on said screen.

10. (Original) A method as claimed in claim 1 comprising designating a plurality of tissue areas within said overview image, and displaying a speed-resolved image for each of said plurality of tissue areas.

Claim 11 has been amended as follows:

11. (Currently amended) A magnetic resonance imaging device comprising:

a magnetic resonance scanner adapted to receive a subject therein;

a control computer connected to said magnetic resonance scanner;

a display screen connected to said control computer; and

said control computer being programmed to operate said magnetic resonance scanner to acquire an overview magnetic resonance of a selected area of a living subject, and to display said overview image on a screen, and to perform a scout flow measurement by causing said magnetic resonance scanner to acquire a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium, and to automatically determine from said scout flow measurement, a peak speed of said flowing medium in said tissue area, and to perform an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed, and to generate and display a speed-resolved image including said tissue area, using said peak spread to set a grey scale range in said speed-resolved image obtained by said optimized flow measurement on a screen in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing

medium and a speed resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.

Claim 12 has been amended as follows:

12. (Currently amended) A computer-readable medium encoded with a data structure, said computer-readable medium being loadable into a control computer of a magnetic resonance imaging apparatus, said magnetic resonance imaging apparatus including a magnetic resonance scanner operated by said control computer, and a display screen connected to said control computer, and said data structure causing said control computer to:

acquire an overview magnetic resonance of a selected area of a living subject;

display said overview image on a screen;

perform a scout flow measurement by acquiring a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium;

determine from said scout flow measurement, determining determine a peak speed of said flowing medium in said tissue area;

perform an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed; and

generate display on said screen a speed-resolved image including said tissue area, obtained by said optimized flow measurement, in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.